National Institute of Environmental Health Sciences

# Preventing cold-related morbidity and mortality in a changing climate

**Author(s):** Conlon KC, Rajkovich NB, White-Newsome JL, Larsen L, O'Neill MS
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**Abstract:**

Winter weather patterns are anticipated to become more variable with increasing average global temperatures. Research shows that excess morbidity and mortality occurs during cold weather periods. We critically reviewed evidence relating temperature variability, health outcomes, and adaptation strategies to cold weather. Health outcomes included cardiovascular-, respiratory-, cerebrovascular-, and all-cause morbidity and mortality. Individual and contextual risk factors were assessed to highlight associations between individual- and neighborhood-level characteristics that contribute to a person's vulnerability to variability in cold weather events. Epidemiologic studies indicate that the populations most vulnerable to variations in cold winter weather are the elderly, rural and, generally, populations living in moderate winter climates. Fortunately, cold-related morbidity and mortality are preventable and strategies exist for protecting populations from these adverse health outcomes. We present a range of adaptation strategies that can be implemented at the individual, building, and neighborhood level to protect vulnerable populations from cold-related morbidity and mortality. The existing research justifies the need for increased outreach to individuals and communities for education on protective adaptations in cold weather. We propose that future climate change adaptation research couple building energy and thermal comfort models with epidemiological data to evaluate and quantify the impacts of adaptation strategies.

**Source:** http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3119517

## Resource Description

**Communication:** ☑

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

**Communication Audience:** ☑

audience to whom the resource is directed

Policymaker, Public

**Exposure :** ☑

weather or climate related pathway by which climate change affects health

Temperature

**Temperature:** Extreme Cold

**Geographic Feature:**

resource focuses on specific type of geography

Rural

**Geographic Location:**

resource focuses on specific location

Global or Unspecified

**Health Co-Benefit/Co–Harm (Adaption/Mitigation):**

specification of beneficial or harmful impacts to health resulting from efforts to reduce or cope with greenhouse gases

A focus of content

**Health Impact:**

specification of health effect or disease related to climate change exposure

Cardiovascular Effect, Injury, Morbidity/Mortality, Respiratory Effect

**Intervention:**

strategy to prepare for or reduce the impact of climate change on health

A focus of content

**Mitigation/Adaptation:**

mitigation or adaptation strategy is a focus of resource

Adaptation

**Population of Concern:** A focus of content

**Population of Concern:**

populations at particular risk or vulnerability to climate change impacts

Elderly, Low Socioeconomic Status

**Other Vulnerable Population:** Rural;People living in moderate winter climates

**Resource Type:**

format or standard characteristic of resource

Review

**Timescale:**

time period studied

Time Scale Unspecified